

## Rail Transportation Occupations

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### Significant Points

- Most workers begin as yard laborers, and later may have the opportunity to train for engineer or conductor jobs.
- Employment of most rail transportation occupations is expected to decline; however, employment of subway and streetcar operators will have average growth.
- Competition for available job opportunities is expected to be keen.
- Nearly 3 out of 4 workers are members of unions, and earnings are relatively high.

### Nature of the Work

More than a century ago, freight and passenger railroads were the ties binding the Nation together and the engine driving the economy. Today, rail transportation remains a vital link in our Nation's transportation network and economy. Railroads deliver billions of tons of freight and thousands of travelers to destinations throughout the Nation, while subways and light-rail systems transport millions of passengers within metropolitan areas.

*Locomotive engineers* are among the most experienced and skilled workers on the railroad. Locomotive engineers operate large trains carrying cargo and passengers between stations. Most engineers run diesel locomotives, while a few operate electrically powered locomotives.

Before and after each run, engineers check the mechanical condition of their locomotive and make minor adjustments on the spot. Engineers receive starting instructions from conductors and move controls such as throttles and airbrakes to drive the locomotive. They monitor gauges and meters that measure speed, amperage, battery charge, and air pressure, both in the brake lines and in the main reservoir.

On the open rail and in the yard, engineers confer with conductors and traffic control center personnel via two-way radio or mobile telephone to issue or receive information concerning stops, delays, and train locations. They interpret and comply with orders, signals, speed limits, and railroad rules and regulations. They must have a thorough knowledge of the signaling systems, yards, and terminals on routes over which they operate. Engineers must be constantly aware of the condition and makeup of their train, because trains react differently to acceleration, braking, and curves, depending on the grade and condition of the rail, the number of cars, the ratio of empty to loaded cars, and the amount of slack in the train.

*Rail yard engineers, dinky operators, and hostlers* drive switching or small "dinky" engines within railroad yards, industrial plants, mines and quarries, or construction projects.

*Railroad conductors* coordinate the activities of freight and passenger train crews. Railroad conductors assigned to freight trains review schedules, switching orders, waybills, and shipping records to obtain loading and unloading information regarding their cargo. Conductors assigned to passenger trains also ensure passenger safety and comfort as they go about collecting tickets and fares, making announcements for the benefit of passengers, and coordinating activities of the crew to provide passenger services.

Before a train leaves the terminal, the conductor and engineer discuss instructions received from the dispatcher concerning the train's route, timetable, and cargo. During the run, conductors use two-way radios and mobile telephones to communicate with dispatchers, engineers, and conductors of other trains. Conductors use dispatch or electronic monitoring devices that relay information about equipment problems on the train or the rail. They may arrange for the removal of defective cars from the train for repairs at the nearest station or stop. In addition, conductors may discuss alternative routes if there is a defect or obstruction on the rail.

*Yardmasters* coordinate activities of workers engaged in railroad traffic operations. These activities include making up or breaking up trains and switching inbound or outbound traffic to a specific section of the line. Some cars are sent to unload their cargo on special tracks, while other cars are moved to other tracks to await assemblage into new trains destined for different cities. Yardmasters inform engineers where to move the cars to fit the planned train configuration. Switches, many of them operated remotely by computer, divert the locomotive or cars to the proper track for coupling and uncoupling.

*Railroad brake, signal, and switch operators* perform a variety of activities, such as operating track switches to route cars to different sections of the yard. They may signal engineers and set warning signals, help to couple and uncouple rolling stock to make up or break up trains, or inspect couplings, airhoses, and handbrakes.



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Traditionally, freight train crews included either one or two brake operators—one in the locomotive with the engineer and another who rode with the conductor in the rear car. Brake operators worked under the direction of conductors and did the physical work involved in adding and removing cars at railroad stations and assembling and disassembling trains in railroad yards. In an effort to reduce costs and take advantage of new technology, most railroads have phased out brake operators. Many modern freight trains use only an engineer and a conductor, stationed with the engineer, because new visual instrumentation and monitoring devices have eliminated the need for crewmembers located at the rear of the train.

In contrast to other rail transportation workers, subway and streetcar operators generally work for public transit authorities instead of railroads. *Subway operators* control trains that transport passengers throughout a city and its suburbs. The trains run in underground tunnels, on the surface, or on elevated tracks. Operators must stay alert to observe signals along the track that indicate when they must start, slow, or stop their train. They also make announcements to riders, may open and close the doors of the train, and ensure that passengers get on and off the subway safely.

To meet predetermined schedules, operators must control the train's speed and the amount of time spent at each station. Increasingly, however, these functions are controlled by computers and not by the operator. When breakdowns or emergencies occur, operators contact their dispatcher or supervisor and may have to evacuate cars.

*Streetcar operators* drive electric-powered streetcars, trolleys, or light-rail vehicles that are similar to streetcars that transport passengers in metropolitan areas. Some tracks may be recessed in city streets or have grade crossings, so operators must observe traffic signals and cope with car and truck traffic. Operators start, slow, and stop their cars so that passengers may get on and off with ease. Operators may collect fares and issue change and transfers. They also answer questions from passengers concerning fares, schedules, and routes.

**Working Conditions**

Many rail transportation employees work nights, weekends, and holidays because trains operate 24 hours a day, 7 days a week. Many work more than a 40-hour workweek. Seniority usually dictates who receives the more desirable shifts.

Most freight trains are unscheduled, and few workers on these trains have scheduled assignments. Instead, workers place their names on a list and wait for their turn to work. Jobs usually are assigned on short notice and often at odd hours. Those who work on trains operating between points hundreds of miles apart may spend several nights at a time away from home.

Workers on passenger trains ordinarily have regular and reliable shifts. Also, the appearance, temperature, and accommodations of passenger trains are more comfortable than those of freight trains.

Rail yard workers spend most of their time outdoors in varying weather. The work of conductors and engineers on local runs, on which trains frequently stop at stations to pick up and deliver cars, is physically demanding. Climbing up and down and getting off moving cars is strenuous and can be dangerous.

**Employment**

Rail transportation workers held 101,000 jobs in 2002, distributed among the detailed occupations as follows:

Railroad conductors and yardmasters .....	38,000
Locomotive engineers and firers .....	33,000
Railroad brake, signal, and switch operators .....	15,000
Subway, streetcar operators and all other rail transportation workers .....	15,000

Most rail transportation workers are employed in either the rail transportation industry or support activities for the industry. The rest work primarily for local governments as subway and streetcar operators and for mining and manufacturing establishments who operate their own locomotives and dinkey engines to move railcars containing ore, coal, and other bulk materials.

**Training, Other Qualifications, and Advancement**

Most railroad transportation workers begin as yard laborers and later may have the opportunity to train for engineer or conductor jobs. Railroads require that applicants have a minimum of a high school diploma or its equivalent. Applicants must have good hearing, eyesight, and color vision, as well as good hand-eye coordination, manual dexterity, and mechanical aptitude. Physical stamina is required for these entry-level jobs. Employers require railroad transportation job applicants to pass a physical examination, drug and alcohol screening, and a criminal background check. Under Federal law, all train crewmembers are subject to random drug and alcohol testing while on duty.

Applicants for locomotive engineer jobs must be at least 21 years old. Employers almost always fill engineer positions with workers who have experience in other railroad-operating occupations. Federal regulations require beginning engineers to complete a formal engineer training program, including classroom, simulator, and hands-on instruction in locomotive operation. The instruction usually is administered by the rail company in programs approved by the Federal Railroad Administration. At the end of the training period, engineers must pass a hearing and visual acuity test, a safety conduct background check, a railroad operation knowledge test, and a skills performance test. The company issues the engineer a license after the applicant passes the examinations. Other conditions and rules may apply to entry-level engineers and usually vary by employer.

To maintain certification, railroad companies must monitor their engineers. In addition, engineers must periodically pass an operational rules efficiency test. The test is an unannounced event requiring engineers to take active or responsive action in certain situations, such as maintaining a particular speed through a curve or yard.

Engineers undergo periodic physical examinations and drug and alcohol testing to determine their fitness to operate locomotives. In some cases, engineers who fail to meet these physical and conduct standards are restricted to yard service; in other instances, they may be disciplined, trained to perform other work, or discharged.

Conductor jobs generally are filled from the ranks of experienced rail transportation workers who have passed tests covering signals, timetables, operating rules, and related subjects. Seniority usually is the main factor in determining promotion to conductor. Entry-level conductors must generally be at least 21 years of age and are either trained by their employers or required to complete a formal conductor training program through a community college.

Newly trained engineers and conductors are placed on the “extra board” until permanent positions become available. Extra-board workers receive assignments only when the railroad needs substitutes for regular workers who are absent because of vacation, illness, or other personal reasons. Seniority rules may allow workers with greater seniority to select their type of assignment. For example, an engineer may move from an initial regular assignment in yard service to road service.

For subway and streetcar operator jobs, subway transit systems prefer applicants with a high school education. Most transit systems that operate subways and streetcars also operate buses. In these systems, subway or streetcar operators usually must start as

bus drivers. Applicants also must be in good health, have good communication skills, and be able to make quick, responsible judgments. New operators generally complete training programs that last from a few weeks to 6 months. At the end of the period of classroom and on-the-job training, operators usually must pass qualifying examinations covering the operating system, troubleshooting, and evacuation and emergency procedures. Some operators with sufficient seniority can advance to station manager or other supervisory positions.

### Job Outlook

Competition for available job opportunities is expected to be keen. Many persons qualify for rail transportation occupations because education beyond high school generally is not required. Rail transportation occupations attract more applicants than the number of available job openings, because the pay is good and the work is steady.

Employment of most railroad transportation occupations is expected to decline through the year 2012. The need to replace workers who transfer to other occupations or retire will be the main source of job openings. Employment in most rail occupations will continue to decline as both railroads and job duties are consolidated. Locomotive engineers and conductors will increasingly take on the job duties of other workers as railroads control labor costs to remain competitive with other modes of transportation. However, employment of subway and streetcar operators will grow about as fast as the average for all occupations, due to increased demand for light-rail transportation systems around the Nation.

Demand for railroad freight service will grow as the economy and the intermodal transportation of goods expand. Intermodal systems use trucks to pick up and deliver the shippers' sealed trailers or containers and employ trains to transport them long distance. This practice saves customers time and money because it carries goods across the country efficiently. For railroads, the benefit has been an increase in the efficiency of equipment use, allowing each train to make more runs each year. In order to compete with other modes of transportation, such as trucks, ships, and aircraft, railroads are improving delivery times and ontime service while reducing shipping rates.

However, growth in the number of railroad transportation workers will be adversely affected by innovations such as larger, faster, more fuel-efficient trains and computerized classification yards that make it possible to move freight more economically. Computers help to keep track of freight cars, match empty cars with the closest loads, and dispatch trains. Computer-assisted devices alert engineers to malfunctions, and work rules now allow trains to operate with two-person crews instead of the traditional three- to five-person crews.

### Earnings

Median hourly earnings of rail transportation occupations in 2002 were relatively high, as indicated by the following tabulation:

Locomotive engineers and locomotive firers .....	\$23.26
Subway and streetcar operators and all other rail transportation workers .....	21.48
Railroad conductors and yardmasters .....	21.39
Railroad brake, signal, and switch operators .....	20.93

Most railroad workers are paid according to miles traveled or hours worked, whichever leads to higher earnings. Full-time employees have steadier work, more regular hours, increased opportunities for overtime work, and higher earnings than do those assigned to the extra board.

Almost three-quarters of railroad transportation workers are members of unions. Many different railroad unions represent various crafts on the railroads. Most railroad engineers are members of the Brotherhood of Locomotive Engineers, while most other railroad transportation workers are members of the United Transportation Union. Many subway operators are members of the Amalgamated Transit Union, while others belong to the Transport Workers Union of North America.

### Related Occupations

Other related transportation workers include bus drivers, truck drivers and driver/sales workers, and those working in water transportation occupations.

### Sources of Additional Information

To obtain information on employment opportunities, contact the employment offices of the various railroads and rail transit systems, or State employment service offices.

For general information about the rail transportation industry, contact either of the following organizations:

- Association of American Railroads, 50 F St. NW., Washington, DC 20001. Internet: <http://www.aar.org>
- Federal Railroad Administration, 1120 Vermont Ave. NW., Washington, DC 20590. Internet: <http://www.fra.dot.gov>

For general information about career opportunities in passenger transportation, contact:

- American Public Transportation Association, 1666 K St. NW., Suite 1100, Washington, DC 20006.

General information on career opportunities as a locomotive engineer is available from:

- Brotherhood of Locomotive Engineers, 1370 Ontario Ave., Cleveland, OH 44113-1702. Internet: <http://www.ble.org>